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The role of small intestinal bacterial overgrowth in Parkinson's disease.

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Abstract

Parkinson's disease is associated with gastrointestinal motility abnormalities favoring the occurrence of local infections. The aim of this study was to investigate whether small intestinal bacterial overgrowth contributes to the pathophysiology of motor fluctuations. Thirty-three patients and 30 controls underwent glucose, lactulose, and urea breath tests to detect small intestinal bacterial overgrowth and Helicobacter pylori infection. Patients also underwent ultrasonography to evaluate gastric emptying. The clinical status and plasma concentration of levodopa were assessed after an acute drug challenge with a standard dose of levodopa, and motor complications were assessed by Unified Parkinson's Disease Rating Scale-IV and by 1-week diaries of motor conditions. Patients with small intestinal bacterial overgrowth were treated with rifaximin and were clinically and instrumentally reevaluated 1 and 6 months later. The prevalence of small intestinal bacterial overgrowth was significantly higher in patients than in controls (54.5% vs. 20.0%; P = .01), whereas the prevalence of Helicobacter pylori infection was not (33.3% vs. 26.7%). Compared with patients without any infection, the prevalence of unpredictable fluctuations was significantly higher in patients with both infections (8.3% vs. 87.5%; P = .008). Gastric half-emptying time was significantly longer in patients than in healthy controls but did not differ in patients based on their infective status. Compared with patients without isolated small intestinal bacterial overgrowth, patients with isolated small intestinal bacterial overgrowth had longer off time daily and more episodes of delayed-on and no-on. The eradication of small intestinal bacterial overgrowth resulted in improvement in motor fluctuations without affecting the pharmacokinetics of levodopa. The relapse rate of small intestinal bacterial overgrowth at 6 months was 43%. © 2013 Movement Disorder Society.

KEYWORDS: Helicobacter pylori; Parkinson's disease; motor fluctuations; small intestinal bacterial overgrowth

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